

07975001 Genuine Article#: 231EK Number of References: 38
Title: Detection of the toxic dinoflagellate *Alexandrium fundyense*
(Dinophyceae) with oligonucleotide and antibody probes: Variability in labeling intensity with physiological condition
Author(s): Anderson DM (REPRINT) ; Kulis DM; Keafer BA; Berdalet E
Corporate Source: WOODS HOLE OCEANOGRAPHIC INSTITUTE, DEPT BIOL/WOODS HOLE//MA/02543
(REPRINT); INSTITUT CIENCIES MAR,/BARCELONA 08039//SPAIN/
Journal: JOURNAL OF PHYCOLOGY, 1999, V35, N4 (AUG), P870-883
ISSN: 0022-3646 Publication date: 19990800
Publisher: PHYCOLOGICAL SOC AMER INC, 810 EAST 10TH ST, LAWRENCE, KS 66044
Language: English Document Type: ARTICLE
Abstract: The toxic dinoflagellate *Alexandrium fundyense* Balech was grown under temperature- and nutrient-limited conditions, and changes in labeling intensity on intact cells were determined for two probe types: an oligonucleotide probe targeting **rRNA** and a monoclonal antibody (MAb) targeting a cell surface protein. In nutrient-replete batch culture, labeling with the **rRNA** probe was up to 400% brighter during exponential phase than during stationary phase, whereas MAb labeling did not change significantly with growth stage at the optimal growth temperature. In cultures grown at suboptimal, low temperatures, there was a significant difference between labeling intensity in stationary versus exponential phase for both probe types, with exponential cells labeling brighter with the **rRNA** probe and slightly weaker with the MAb. The decrease in **rRNA** probe labeling with increasing culture age was likely due to lower abundance of the target nucleic acid, as extracted RNA varied in a similar manner. With the IMAI, and the **rRNA** probes, slower growing cultures at low, nonoptimal temperature labeled 35% and 50% brighter than cells growing faster at warmer temperatures. Some differences in labeling intensity per cell disappeared when the data were normalized to surface area or volume, which indicated that the number of target antigens or **rRNA** molecules was relatively constant per unit area or volume, respectively. Slow growth accompanying phosphorus and nitrogen limitation resulted in up to a 400% decrease in labeling intensity with the **rRNA** probe compared to nutrient-replete levels, whereas the MAb labeling intensity increased by a maximum of 60%. With both probes, labeling was more intense under phosphorus limitation than under nitrogen limitation, and for all conditions tested, labeling intensity was from 600% to 3600% brighter with the MAb than with the **rRNA** probe. Thus, it is clear that significant levels of variability in labeling intensity can be expected with both probe types because of the influence of environmental conditions and growth stage on cellular biochemistry, cell size, **rRNA** levels, and the number or accessibility of cell surface proteins. Of the two probes tested, the **rRNA** probe was the most variable, suggesting that in automated, whole-cell assays, it can be used only in a semiquantitative manner. For manual counts, the human eye will likely accommodate the labeling differences. The MAb probe was less variable, and thus should be amenable to both manual and automated counts.

3/7/98 (Item 24 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
(c) 2002 Inst for Sci Info. All rts. reserv.

03701539 Genuine Article#: PZ536 Number of References: 14
Title: CHEMILUMINESCENCE DETECTION OF RED TIDE PHYTOPLANKTON
CHATTONELLA-MARINA
Author(s): LEE TY; GOTOH N; NIKI E; YOKOYAMA K; TSUZUKI M; TAKEUCHI T;
KARUBE I
Corporate Source: UNIV TOKYO, ADV SCI & TECHNOL RES CTR, MEGURO KU, 4-6-1
KOMABA/TOKYO 153//JAPAN/; UNIV TOKYO, ADV SCI & TECHNOL RES CTR, MEGURO
KU/TOKYO 153//JAPAN/

2/7/17 (Item 3 from file: 94)
DIALOG(R)File 94:JICST-Eplus
©2002 Japan Science and Tech Corp (JST). All rts. reserv.

03885899 JICST ACCESSION NUMBER: 99A0248253 FILE SEGMENT: PreJICST-E
Detection of red tide causing phytoplankton, **Heterosigma** akashiwo, by
using fluorescence polarization.
ASAI RYOICHI (1); OTANI KOZUE (1); NOMURA YOKO (1); MATSUKAWA RITSUKO (2);
IKEBUKURO KAZUNORI (2); KARUBE ISAO (2); ARIKAWA YOSHIKO (3); (2) Univ.
of Tokyo; (3) Japan Women's Univ.

Nippon Kagakkai Koen Yokoshu, 1998, VOL.75th, PAGE.315
JOURNAL NUMBER: S0493AAY ISSN NO: 0285-7626
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Conference Proceeding
MEDIA TYPE: Printed Publication

ABSTRACT: Fluorescence polarization was applied to monitoring of the red tide phytoplankton, **Heterosigma** akashiwo, which frequently caused fish death. Fluorescence polarization is a measure of the time-averaged rotational motion of fluorescent molecules. First, 18S ribosomal RNA of dominant phytoplankton causing red tide was analyzed and a pair of the 20mer origonucleotide was found as specific primers. The PCR was performed to amplify specific rRNA sequence and its PCR product was observed by electrophoresis. Then, the PCR product of FITC-labeled **primer** was applied to fluorescence polarization measurement. The increase of fluorescent polarization intensity of its PCR product was observed. (author abst.)

2/7/18 (Item 4 from file: 94)
DIALOG(R)File 94:JICST-Eplus

SYSTEM:OS - DIALOG OneSearch

File 5:Biosis Previews(R) 1969-2002/Oct W3
(c) 2002 BIOSIS

*File 5: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 6:NTIS 1964-2002/Oct W3
(c) 2002 NTIS, Intl Cpyright All Rights Res

*File 6: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 34:SciSearch(R) Cited Ref Sci 1990-2002/Oct W4
(c) 2002 Inst for Sci Info

*File 34: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 40:Enviroline(R) 1975-2002/Oct

File 50:CAB Abstracts 1972-2002/Sep
(c) 2002 CAB International

*File 50: Truncating CC codes is recommended for full retrieval.
See Help News50 for details.

File 65:Inside Conferences 1993-2002/Oct W3
(c) 2002 BLDSC all rts. reserv.

File 68:Env.Bib. 1972-2002/Jun
(c) 2002 Internl Academy at Santa Barbara

File 71:ELSEVIER BIOBASE 1994-2002/Oct W3
(c) 2002 Elsevier Science B.V.

File 73:EMBASE 1974-2002/Oct W3
(c) 2002 Elsevier Science B.V.

*File 73: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 94:JICST-EPlus 1985-2002/Aug W3
(c) 2002 Japan Science and Tech Corp(JST)

File 98:General Sci Abs/Full-Text 1984-2002/Sep
(c) 2002 The HW Wilson Co.

File 103:Energy SciTec 1974-2002/Oct B1
(c) 2002 Contains copyrighted material

*File 103: For access restrictions see Help Restrict.

File 143:Biol. & Agric. Index 1983-2002/Sep
(c) 2002 The HW Wilson Co

File 144:Pascal 1973-2002/Oct W3
(c) 2002 INIST/CNRS

File 155:MEDLINE(R) 1966-2002/Oct W3

*File 155: Alert feature enhanced for multiple files, duplicates removal, customized scheduling. See HELP ALERT.

File 156:ToxFile 1965-2002/Oct W3
(c) format only 2002 The Dialog Corporation

File 172:EMBASE Alert 2002/Oct W3
(c) 2002 Elsevier Science B.V.

File 305:Analytical Abstracts 1980-2002/Oct W1
(c) 2002 Royal Soc Chemistry

*File 305: Alert feature enhanced for multiple files, duplicate removal, customized scheduling. See HELP ALERT.

File 369:New Scientist 1994-2002/Sep W4
(c) 2002 Reed Business Information Ltd.

File 370:Science 1996-1999/Jul W3
(c) 1999 AAAS

*File 370: This file is closed (no updates). Use File 47 for more current information.

File 399:CA SEARCH(R) 1967-2002/UD=13717
(c) 2002 American Chemical Society

*File 399: Use is subject to the terms of your user/customer agreement.
Alert feature enhanced for multiple files, etc. See HELP ALERT.

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info

Set	Items	Description
? s	(raphidoph? or heterosigma or chattonella or fibrocapsa)	
	927	RAPHIDOPH?
	1083	HETEROSIGMA
	1182	CHATTONELLA
	83	FIBROCAPSA
S1	2282	(RAPHIDOPH? OR HETEROSIGMA OR CHATTONELLA OR FIBROCAPSA)
? s	s1 and (rrna or ribosomal or its or (transcribed (w) spacer))	
	2282	S1
	107475	RRNA
	233919	RIBOSOMAL
	6890922	ITS
	104815	TRANSCRIBED
	70066	SPACER
	14119	TRANSCRIBED(W) SPACER
S2	271	S1 AND (RRNA OR RIBOSOMAL OR ITS OR (TRANSCRIBED (W) SPACER))
? rd s2		
	...examined 50 records	(50)
	...examined 50 records	(100)
	...examined 50 records	(150)
	...examined 50 records	(200)
	...examined 50 records	(250)
	...completed examining records	
S3	153	RD S2 (unique items)